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BEUSSE BROWNLEE WOLTER MORA & MAIRE, P. A. 390 NORTH ORANGE AVENUE SUITE 2500 ORLANDO, FL 32801			HUNG, YUBIN	
			ART UNIT	PAPER NUMBER
			2625	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/007,333	Applicant(s) DONER, JOHN R.	
	Examiner Yubin Hung	Art Unit 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>03/04/02, 05/23/03</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because Figures 1 and 2 are hand-sketched and cannot be properly reproduced.

The requirement for corrected drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:
 - P. 12, line 8: there should have been only seven 2-bit fields, instead of eight, since there are only seven data pixels in the run

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claim 1 is rejected under 35 U.S.C. 102 (b) as being anticipated by Bhaskaran et al. (*Image and Video Compression Standards Algorithms and Architectures*, 2nd ed., 1997).

5. Regarding claim 1, Bhaskaran discloses

- (a) scanning the pixels line by line
[P. 47, lines 8-10]
- (b) assigning a first instruction to a plurality of successive pixels depicting the image background, wherein the first instruction indicates the number of successive background pixels
[P. 46, Sect. 2.11.1, lines 1-6. Note that the (run, value) combination for the background color (value=0) is considered the first instruction]
- (c) assigning a second instruction to a plurality of successive data pixels, wherein the second instruction indicates the number of successive data pixels
[P. 46, Sect. 2.11.1, lines 1-6. Note that the run for the foreground pixels (value=1) is considered the second instruction. Note further that in general, when pixels are designated as either background or data, then the image can be considered a binary image and a bitonal run-length coding can be applied; the value for data will be 1 in this case]

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bhaskaran et al. (*Image and Video Compression Standards Algorithms and Architectures*, 2nd ed., 1997) as applied to claim 1 above, and further in view of Matsushiro (US 6,301,300).

Regarding claim 2, Bhaskaran discloses all limitations of its parent, claim 1.

Bhaskaran does not expressly disclose the following:

- (b1) determining the number of successive lines comprising only background pixels and (b2) assigning a third instruction representing the number of successive lines determined at step (b1)
- (b3) determining the number of successive background pixels less than one line in length and (b4) assigning a fourth instruction representing the number of successive background pixels determined at the step (b3)

However, in [Figs. 1A, 1B; Col. 3, line 57 – Col. 4, line 5] Matsushiro teaches determining the number of background-only lines (i.e., white lines) and assigning a code (OFFSET, i.e., the third instruction) representing that number.

In addition, Matsushiro teaches determining runs that are shorter than a line and assigning to each run its start and end positions (i.e., the fourth instruction *representing* the number of successive pixels). Although the runs Matsushiro considers are data runs, not the background runs as recited in the claim, it would have been obvious to one of ordinary skill in the art that for a line containing both data and background pixels, whether it is the data runs or background runs are encoded is a matter of design choice. Applicant has not disclosed that encoding

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background runs provides an advantage, is used for a particular purpose or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with encoding data runs instead because except when data pixels are at both the beginning and the end of a line, the number of data runs in that line is no greater than the number of background runs.

Matsushiro and Bhaskaran are combinable because they both have aspects that are from the same field of endeavor of data compression/decompression.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Bhaskaran with the teachings of Matsushiro by counting the number of successive all-background lines and the lengths of runs in a mixed line (i.e., a line with both data and background pixels) and assign different instructions to each. The motivation would have been to further improve the coding efficiency by not having to allocate code for each all-background line.

Therefore, it would have been obvious to combine Matsushiro with Bhaskaran to obtain the invention as specified in claim 2.

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bhaskaran et al. (*Image and Video Compression Standards Algorithms and Architectures*, 2nd ed., 1997) and Matsushiro (US 6,301,300) as applied to claim 2 above, and further in view of Imade et al. (US 5,872,864).

Regarding claim 3, the combined invention of Bhaskaran and Matsushiro discloses all limitations of its parent, claim 2.

The combined invention of Bhaskaran and Matsushiro does not expressly disclose the following:

- determining the number of background pixels between two data pixels in a single line of pixels
- assigning a fifth instruction if the number of successive background pixels is less than a predetermined value
- assigning a sixth instruction if the number of successive background pixels is greater than the predetermined value

However, Imade discloses identifying short white (considered as background) runs and replacing their color with that of the data (black). [See Col. 17, lines 59-66.] The replacement is considered the fifth instruction. Note that after all short run background runs are replaced, the remaining background runs are all longer than the predetermined value and therefore the first instruction now is equivalent to the sixth instruction.

Note that whether a separate sixth instruction is assigned is obviously a design choice since at this point the a background run assigned a first instruction

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must have a length greater than a predetermined value, exactly what the sixth instruction is to convey. Therefore, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to use only the first instruction. Applicant has not disclosed that using a separate sixth instruction provides an advantage, is used for a particular purpose or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with the first instruction alone because both instructions perform the same function of describing a background run that is longer than a predetermined number.

Imade and the combined invention of Bhaskaran and Matsushiro are combinable because they both have aspects that are from the same field of endeavor of image processing.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the combined invention of Bhaskaran and Matsushiro with the teachings of Imade by identifying short white (background) runs and replacing their color with black, the color of data (with the replacement being considered the fifth instruction) as well as assigning a sixth instruction to the remaining background runs (i.e., those background runs with a length greater than a predetermined value). The motivation would have been to smooth the image by removing speckles of background pixels (white pixels) to enhance the visual effect as well as to improve compression results.

Therefore, it would have been obvious to combine Imade with Bhaskaran and Matsushiro to obtain the invention as specified in claim 3.

9. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bhaskaran et al. (*Image and Video Compression Standards Algorithms and Architectures*, 2nd ed., 1997), Matsushiro (US 6,301,300) and Imade et al. (US 5,872,864) as applied to claim 3 above, and further in view of Tateyama (US 5,515,077).

Regarding claim 4, the combined invention of Bhaskaran, Matsushiro and Imade discloses all limitations of its parent, claim 3.

The combined invention of Bhaskaran, Matsushiro and Imade does not expressly disclose

- the predetermined value is 64, and wherein the fifth instruction comprises an eight bit byte, and wherein the first and the second bits identify the instruction type and the third through the eighth bits identify the number of successive background pixels, and wherein the sixth instruction comprises two eight bit bytes, and wherein the first and the second bits identify the instruction type and the third through the sixteenth bits identify the number of successive background pixels

However, Tateyama discloses data formats (either 1 or 2 bytes long) consisting of two fields of different bit lengths with one indicating the mode (considered as

instruction type) and the other the run length. [See Fig. 32.] Note that the number of bits allocated to run length determines the size of the pre-determined value. (E.g., in 16-color mode, 4 bits are allocated to run length and the predetermined value is therefore 16.)

Moreover, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to have a pre-determined value of 64 (i.e., 6 bits) and to allocate two bits to the instruction type (i.e., mode). Applicant has not disclosed that using such allocation (of 2 bits and 6 bits) provides an advantage, is used for a particular purpose or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with either the bit allocation taught by Tateyama or the claimed bit allocation because both allocations perform the same function of specifying the instruction type (i.e., mode) and the length of the run.

Tateyama and the combined invention of Bhaskaran, Matsushiro and Imade are combinable because they both have aspects that are from the same field of endeavor of image processing.

Therefore, it would have been obvious to of ordinary skill in this art to modify Tateyama with the 2-bit/6-bit allocation to obtain the invention as specified in claim 4.

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10. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bhaskaran et al. (*Image and Video Compression Standards Algorithms and Architectures*, 2nd ed., 1997).

11. Regarding claim 5, Bhaskaran discloses all limitations of its parent, claim 1 (per the analysis of claim 1 above). In addition, Bhaskaran further discloses

- determining the color of each successive data pixel and appending a bit field to the second instruction
[P. 46, Sect. 2.11.1, lines 1-6. Note that the in the (run, value) combination where 'value' equals 1 (i.e., representing the foreground, or, data, color), 'color' field is appended to the second instruction, which is the length of a data run (per analysis of claim 1)]
- wherein each one of the plurality of bit fields identifies the color for one or more of the successive data pixel
[Sect. 2.11, lines 6-8. Note that each scan line, considered as a run of data pixels, consists of pixels of either black or white color or equivalently, a plurality of 1-bit long fields]

It would therefore have been obvious to one of ordinary skill in the art to append a plurality of color-identifying fields to the second instruction when the run of data pixels it describes have more than one color. The motivation would have been to be able to faithfully reproduce the colors of the encoded pixels.

12. Regarding claim 6, Bhaskaran discloses all limitations of its parent, claim 5.

Bhaskaran does not expressly disclose

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- wherein the number of bits in each one of the pluralities of bit fields is determined by the number of colors to be displayed in the graphical image

However, at the time of the invention it would have been obvious to one of ordinary skill in the art to use only the minimum number of bits required to encode the given number of colors. (In this way the number of bits used is determined by the number of colors). The motivation would have been to minimize the resulting data amount.

13. Regarding claim 7, Bhaskaran further discloses

- the number of bit fields is equal to the number of successive data pixels indicated by the second instruction
[Sect. 2.11, lines 6-8. Note that each scan line, considered as a run of data pixels, consists of pixels of either black or white color or equivalently, a plurality of 1-bit long fields]

14. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bhaskaran et al. (*Image and Video Compression Standards Algorithms and Architectures*, 2nd ed., 1997) as applied to claim 1 above, and further in view of Cullen et al. (US 5,781,665).

Regarding claim 8, Bhaskaran discloses all limitations of its parent, claim 1.

Bhaskaran does not expressly disclose the following:

- reducing the graphical image size by deleting those pixels in one or more predetermined areas

However, Cullen discloses a method of cropping out predetermined areas of an image. [Fig. 1. Note that the non-facial areas are the predetermined areas.]

Cullen and Bhaskaran are combinable because they both have aspects that are from the same field of endeavor of data compression/decompression.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Bhaskaran with the teachings of Cullen by cropping out predetermined areas of an image. The motivation would have been to remove unimportant areas of the images in order to reduce their sizes. (See Tables III and IV in Cols. 6 and 7, respectively of Cullen.).

Therefore, it would have been obvious to combine Cullen with Bhaskaran to obtain the invention as specified in claim 8.

15. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bhaskaran et al. (*Image and Video Compression Standards Algorithms and Architectures*, 2nd ed., 1997) as applied to claim 1 above, and further in view of Kelly (US 6,448,922).

16. Regarding claim 9, Bhaskaran discloses all limitations of its parent, claim 1.

Bhaskaran does not expressly disclose the following:

- the graphical image represents radar weather data

However, Kelly discloses on-board radar that acquires weather images. [Fig. 4A. Col. 5, lines 47-60.]

Kelly and Bhaskaran are combinable because they both have aspects that are from the same field of endeavor of image processing.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Bhaskaran with the teachings of Kelly by acquiring radar weather images. The motivation would have been to provide information for the all-important task of Weather forecasting.

Therefore, it would have been obvious to combine Kelly with Bhaskaran to obtain the invention as specified in claim 9.

17. Regarding claim 10, Kelly further discloses

- wherein the radar weather data comprises precipitation data, and wherein the precipitation intensity is indicated by the color assigned to each data pixel
[Col. 3, lines 54-58; Col. 5, lines 47-60]

18. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bhaskaran et al. (*Image and Video Compression Standards Algorithms and Architectures*, 2nd ed., 1997) as applied to claim 1 above, and further in view of Imade et al. (US 5,872,864).

19. Regarding claim 11, Bhaskaran discloses all limitations of its parent, claim 1.

Bhaskaran does not expressly disclose the following:

- determining the number of successive data pixels in each plurality of data pixels, and if the number is less than a predetermined number in one or more of the plurality of data pixels, changing the color of each data pixel in the one or more of the plurality of data pixels to the background color

However, Imade discloses identifying short white (considered as data) runs and replacing their color with that of the background (black). [Col. 17, lines 59-66.]

Imade and Bhaskaran are combinable because they both have aspects that are from the same field of endeavor of image processing.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Bhaskaran with the teachings of Imade by identifying short white (i.e., data) runs and replacing their color with that of the background. The

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motivation would have been to smooth the image by removing speckles of data pixels (white pixels) to enhance the visual effect as well as to improve compression results.

Therefore, it would have been obvious to combine Imade with Bhaskaran to obtain the invention as specified in claim 11.

20. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bhaskaran et al. (*Image and Video Compression Standards Algorithms and Architectures*, 2nd ed., 1997) as applied to claim 1 above, and further in view of Ozaki et al. (US 5,345,316).

21. Regarding claim 12, Bhaskaran discloses all limitations of its parent, claim 1.

Bhaskaran does not expressly disclose the following:

- assigning a line designator to one or more of the lines of pixels

However, Ozaki discloses adding an End-of-Line code (i.e., a line designator) to an encoded line. [See Col. 7, lines 13-18.]

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Ozaki and Bhaskaran are combinable because they both have aspects that are from the same field of endeavor of image processing.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Bhaskaran with the teachings of Ozaki by adding an End-of-Line code (i.e., a line designator) to an encoded line. The motivation would have been to be able to display an image properly after decoding.

Therefore, it would have been obvious to combine Ozaki with Bhaskaran to obtain the invention as specified in claim 12.

22. Claims 13, 15, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bhaskaran et al. (*Image and Video Compression Standards Algorithms and Architectures*, 2nd ed., 1997) and Matsushiro (US 6,301,300) as applied to claim 2, and further in view of Cullen et al. (US 5,781,665), Imade et al. (US 5,872,864) and Kelly et al. (US 6,448,922).

23. Regarding claim 13, it is similarly analyzed and rejected as per the analyses of claims 1, 2, 5, and 8-11. Specifically,

Bhaskaran and Matsushiro disclose/teach

- (b) scanning the pixels line by line

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- [Per the analysis of claim 1]
- (d) assigning a first instruction representing the number of successive lines composed entirely of background pixels
[Per the analysis of claim 2. Note that whether the instruction is called first or third is irrelevant]
- (e) determining the number of successive background pixels in a line
[Per the analysis of claim 2]
- (f) assigning a second instruction representing the number of successive background pixels in a line
[Per the analysis of claim 2]
- (g) assigning a third instruction representing the number of successive data pixels in a line, wherein the third instruction comprises a first field representing the number successive data pixels and a second field representing the color of each successive data pixel
[Per the analysis of claim 5]
- (h) concatenating the first, second and third instructions to form the bit stream
[Per the analysis of claim 5. Note that it is obvious to concatenate all instructions to produce the encoded data]

And Cullen, Imade and Kelly disclose/teach

- wherein the graphical weather image comprises a plurality of pixels for display, and wherein the plurality of pixels comprise background pixels all of a background color for depicting the image background and data pixels each having one of a plurality different colors, and wherein the data pixel color represents the precipitation intensity
[Per the analyses of claims 9 and 10]
- (a) deleting background and data pixels from predetermined areas of the image
[Per the analysis of claim 8]
- (c) identifying data pixel segments within a line of pixels, wherein a data pixel segment comprises a plurality of successive data pixels, and wherein if there are less than a predetermined number of data pixels within the data pixel segment, changing the color of each data pixel within the data pixel segment to the background color
[Per the analysis of claim 11]

Bhaskaran, Matsushiro, Cullen, Imade and Kelly are combinable because they all have aspects that are from the same field of endeavor of image processing.

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At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the combined invention of Bhaskaran and Matsushiro with the teachings of Cullen, Imade and Kelly by deleting data from predetermined portion as well as identifying short white (i.e., data) runs and replacing their color with that of the background. The motivation would have been to reduce the image size as well as to enhance the visual effect and to improve compression results.

Therefore, it would have been obvious to combine Cullen, Imade and Kelly with Bhaskaran and Matsushiro to obtain the invention as specified in claim 13.

24. Regarding claim 15, it is rejected because Bhaskaran, Matsushiro and Imade further teach/suggest

- determining whether the number of successive background pixels in a line is greater than a predetermined value; assigning the second instruction to represent the number of background pixels in the line when the number of successive background pixels is less than the predetermined value; and assigning a fourth instruction to represent the number of background pixels in the line when the number of successive background pixels is greater than the predetermined value
[Per the analysis of claim 3]

25. Regarding claim 17, it is rejected because it is a method for decoding the data stream resulting from the encoding method of claim 13 obtained by reversing the encoding operations and is therefore obvious.

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26. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bhaskaran et al. (*Image and Video Compression Standards Algorithms and Architectures*, 2nd ed., 1997), Matsushiro (US 6,301,300), Cullen et al. (US 5,781,665), Imade et al. (US 5,872,864) and Kelly et al. (US 6,448,922) as applied to claims 13, 15 and 17, and further in view of Fukumoto et al. (JP 2001-265316).

Regarding claim 14, the combined invention of Bhaskaran, Matsushiro, Cullen, Imade and Kelly discloses all limitations of its parent, claim 13.

The combined invention of Bhaskaran, Matsushiro, Cullen, Imade and Kelly does not expressly disclose

- wherein the graphical image weather data comprises geographical boundaries of a color different from both the background color and the data pixel colors, and further comprising the step of removing the geographical boundaries by changing the color representing the geographical boundaries to the background color

However, Fukumoto teaches using an image (a font image) having a character or graphic part (i.e., data), an outline part (i.e., boundary) and a background part.

[See lines 6-7 of the English abstract.] Fukumoto further teaches eliminating outlines by changing their color to that of the background. [See lines 13-15.]

The combined invention of Bhaskaran, Matsushiro, Cullen, Imade and Kelly are combinable with Fukumoto because they both have aspects that are from the same field of endeavor of image processing.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the combined invention of Bhaskaran, Matsushiro, Cullen, Imade and Kelly with the teachings of Fukumoto by eliminating outlines by changing their color to that of the background. The motivation would have been to be able to display an image with a look that may be more pleasing to the viewers; user-friendliness will additionally be enhanced if this is offered as an option.

Therefore, it would have been obvious to combine Fukumoto with Bhaskaran, Matsushiro, Cullen, Imade and Kelly to obtain the invention as specified in claim 14.

27. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bhaskaran et al. (*Image and Video Compression Standards Algorithms and Architectures*, 2nd ed., 1997), Matsushiro (US 6,301,300), Cullen et al. (US 5,781,665), Imade et al. (US 5,872,864) and Kelly et al. (US 6,448,922) as applied to claims 13, 15 and 17, and further in view of Ozaki et al. (US 5,345,316).

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Regarding claim 16, the combined invention of Bhaskaran, Matsushiro, Cullen, Imade and Kelly discloses all limitations of its parent, claim 13.

The combined invention of Bhaskaran, Matsushiro, Cullen, Imade and Kelly does not expressly disclose the step of appending a line designator to the bit stream at the end of one or more pixel display lines.

However, per the analysis of claim 12 Ozaki teaches this limitation.

The combined invention of Bhaskaran, Matsushiro, Cullen, Imade and Kelly are combinable with Ozaki because they both have aspects that are from the same field of endeavor of image processing.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the combined invention of Bhaskaran, Matsushiro, Cullen, Imade and Kelly with the teachings of Ozaki by adding an End-of-Line code (i.e., a line designator) to an encoded line. The motivation would have been to be able to display an image properly after decoding.

Therefore, it would have been obvious to combine Ozaki with Bhaskaran, Matsushiro, Cullen, Imade and Kelly to obtain the invention as specified in claim 16.

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28. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bhaskaran et al. (*Image and Video Compression Standards Algorithms and Architectures*, 2nd ed., 1997), Matsushiro (US 6,301,300), Cullen et al. (US 5,781,665), Imade et al. (US 5,872,864) and Kelly et al. (US 6,448,922) as applied to claims 13, 15 and 17, and further in view of Wendt (US 4,422,180).

Regarding claim 18, the combined invention of Bhaskaran, Matsushiro, Cullen, Imade and Kelly discloses

- a data compressor for receiving data bits representing the pixels comprising the graphical weather image and for producing a compressed data bit stream by compressing the data bits according to the number of successive pixels of the background color and the number of successive pixels of the information color
[Per the analysis of claim 13]
- a data decompressor for decompressing the recovered compressed bit stream for producing the recovered data bits representing the pixels comprising the geographical weather image, by determining the number of successive pixels of the background color and the number of successive pixels of the information color
[Per the analysis of claim 17]

The combined invention of Bhaskaran, Matsushiro, Cullen, Imade and Kelly does not expressly disclose

- a carrier signal
- a modulator for modulating the carrier signal with the compressed bit stream
- a transmitter for transmitting the modulated carrier signal
- a receiver in the aircraft for receiving the modulated carrier signal
- demodulator responsive to the received modulated carrier signal for recovering the compressed bit stream
- a display responsive to the recovered data bits for displaying the pixels comprising the graphical weather image

However, Wendt discloses a signal transmitting apparatus particularly for aircraft that includes a transmitter, a receiver, a modulator, a demodulator and a display. [See Figs., 6 & 8, Col. 8, line 61 through Col. 9, line 30 and Col. 11, lines 9-10.]

The combined invention of Bhaskaran, Matsushiro, Cullen, Imade and Kelly are combinable with Wendt because they both have aspects that are from the same field of endeavor of data encoding/decoding.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the combined invention of Bhaskaran, Matsushiro, Cullen, Imade and Kelly with the teachings of Wendt by including a transmitter, a receiver, a modulator, a demodulator and a display. The motivation would have been to be able to communicate critical information to an aircraft and display the decoded information for the pilots to facilitate proper decision-making.

Therefore, it would have been obvious to combine Wendt with Bhaskaran, Matsushiro, Cullen, Imade and Kelly to obtain the invention as specified in claim 18.

29. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bhaskaran et al. (*Image and Video Compression Standards Algorithms and*

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Architectures, 2nd ed., 1997), Matsushiro (US 6,301,300), Cullen et al. (US 5,781,665), Imade et al. (US 5,872,864), Kelly et al. (US 6,448,922) and Wendt (US 4,422,180) as applied to claim 18, and further in view of Marey et al. (US 3,916,436).

Regarding claim 19, the combined invention of Bhaskaran, Matsushiro, Cullen, Imade, Kelly and Wendt discloses all limitations of its parent, claim 18.

The combined invention of Bhaskaran, Matsushiro, Cullen, Imade, Kelly and Wendt does not expressly disclose

- wherein the transmitter is a television picture signal transmitter, and wherein the carrier signal is the carrier signal of the television picture, and wherein the television picture comprises an information interval during which picture information is transmitted and a vertical blanking interval during which no information is transmitted, and wherein the compressed data bit stream modulates the carrier signal during the vertical blanking interval

However, Corey discloses a TV signal transmitting apparatus that modulates the carrier only during vertical blanking period. [See the last seven lines of the abstract.]

The combined invention of Bhaskaran, Matsushiro, Cullen, Imade, Kelly and Wendt are combinable with Marey because they both have aspects that are from the same field of endeavor of data encoding/decoding.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the combined invention of Bhaskaran, Matsushiro, Cullen, Imade, Kelly and Wendt with the teachings of Marey by including a transmitter, a receiver, a modulator, a demodulator and a display. The motivation would have been to be able to communicate critical information to an aircraft and display the decoded information for the pilots to facilitate proper decision-making.

Therefore, it would have been obvious to combine Marey with Bhaskaran, Matsushiro, Cullen, Imade, Kelly and Wendt to obtain the invention as specified in claim 19.

30. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bhaskaran et al. (*Image and Video Compression Standards Algorithms and Architectures*, 2nd ed., 1997), Matsushiro (US 6,301,300), Cullen et al. (US 5,781,665), Imade et al. (US 5,872,864), Kelly et al. (US 6,448,922) and Wendt (US 4,422,180) as applied to claim 18, and further in view of Waguri (US 6,370,278).

Regarding claim 19, the combined invention of Bhaskaran, Matsushiro, Cullen, Imade, Kelly and Wendt discloses all limitations of its parent, claim 18.

The combined invention of Bhaskaran, Matsushiro, Cullen, Imade, Kelly and Wendt does not expressly disclose

- wherein the display further comprises a stored image of the geographical boundaries of the graphical weather image, and wherein the geographical boundaries are displayed with the pixel display of the graphical weather image

However, Waguri discloses extracting boundary information and subsequently superimposing boundary information on another image. [See Abstract.]

The combined invention of Bhaskaran, Matsushiro, Cullen, Imade, Kelly and Wendt are combinable with Waguri because they both have aspects that are from the same field of endeavor of data encoding/decoding.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the combined invention of Bhaskaran, Matsushiro, Cullen, Imade, Kelly and Wendt with the teachings of Waguri by extracting boundary information and superimposing boundary information on another image (such as a weather map) for display. The motivation would have been to be able to preserve information necessary to reconstruct the boundaries of data (say, with background) which may otherwise be lost if the images has to be encoded for efficient transmission. [See Waguri, Col. 1, lines 10-22.]

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Therefore, it would have been obvious to combine Waguri with Bhaskaran, Matsushiro, Cullen, Imade, Kelly and Wendt to obtain the invention as specified in claim 20.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yubin Hung whose telephone number is (703) 305-1896. The examiner can normally be reached on 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (703) 308-5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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